Abundance Without Ownership: Automation, Dependency, and the Political Economy of Machine Production

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Abstract

Contemporary accounts of artificial intelligence and robotics frequently predict a transition from labor scarcity to material abundance. In the strongest version of this thesis, automated cognition and automated physical production jointly reduce marginal costs, eliminate compulsory employment, and eventually render money unnecessary. This paper develops the opposing interpretation. Money is treated not merely as a neutral mechanism for allocating scarce resources, but as an institutional technology for controlling access, directing conduct, and preserving asymmetric power. Artificial intelligence may increase the volume of intellectual output without increasing the human judgment required to evaluate it. Robotics may displace labor while simultaneously destroying the bargaining power, social function, and independent standing of workers. Self-maintaining automation may remain vulnerable to epistemic closure, accumulated error, infrastructural decay, and the loss of human repair capacity. Under concentrated ownership, abundance does not necessarily produce liberty. It may instead create a population economically unnecessary to production yet completely dependent upon administrative distribution. The decisive political distinction is therefore not scarcity versus abundance, but agency versus dependency. The governing proposition is:

abundance without ownership = dependency.

Keywords: artificial intelligence, automation, robotics, money, scarcity, ownership, universal income, technological feudalism, dependency, human agency, epistemic decline, political economy.

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1. Introduction

The post-scarcity argument begins with a plausible technical observation. If artificial intelligence can reproduce cognitive labor and robots can reproduce physical labor, then the cost of producing many goods and services may decline sharply. From this possibility follows a larger social prediction:

automation → abundance → freedom from labor → diminished importance of money.

The sequence appears coherent only because several political assumptions remain unstated. It assumes that production and access are equivalent, that technical capacity becomes public availability, that machine owners will distribute output broadly, that human beings will accept economic displacement, and that automated systems can sustain themselves without continuing human understanding.

None of these conclusions follows from automation alone.

A productive system may generate abundance while restricting access. A society may possess immense computational power while losing the judgment required to direct it. A machine economy may eliminate employment without liberating workers. Universal income may protect consumption while abolishing economic independence. The resulting order could be materially productive yet politically coercive.

The central problem is therefore not whether machines can produce enough. It is whether persons retain independent standing within a machine-dominated economy.

2. Money as an Instrument of Control

The conventional economic definition treats money as a medium of exchange, store of value, and unit of account. Within this framework, money coordinates transactions among persons competing for scarce goods. The simplified sequence is:

scarcity → exchange → price → allocation.

This formulation is incomplete because allocation is never merely descriptive. Allocation determines who receives access and who is excluded.

Money is therefore also a permission system.

A person with sufficient money may enter, purchase, travel, consume, acquire, or command. A person without it may be prevented from obtaining necessities even when those necessities physically exist. The mechanism does not merely register scarcity. It converts institutional power into differentiated access.

The more complete sequence is:

ownership → control of access → monetary condition → permitted consumption.

Money can mediate freedom when it is widely obtainable through independent work, property, trade, or enterprise. It can also mediate domination when the institutions controlling money determine the conditions under which a person may live.

An employer controls wages.
A lender controls credit.
A platform controls transactions.
A state controls legal tender.
An automated distributor may control subsistence itself.

Money is therefore neither inherently liberating nor inherently oppressive. Its political meaning depends upon the distribution of productive power.

Definition 1. Monetary control

Monetary control is the capacity to condition another person's access to goods, services, movement, or security upon compliance with rules established by the controller.

Definition 2. Economic independence

Economic independence is the capacity of a person or community to maintain material existence without continuous discretionary permission from a dominant external institution.

These definitions reveal the central danger in the claim that money will disappear. Money may disappear as private purchasing power while remaining present as centralized allocation authority.

The currency vanishes; the permission structure remains.

3. The Difference Between Allocation and Domination

Not every allocation mechanism is domination. Scarce resources must be distributed somehow. The distinction depends upon whether the recipient possesses alternatives, rights, bargaining power, and an independent capacity to refuse.

Let:

- A denote access to necessities,
- C denote compliance with institutional demands,

- I denote independent productive capacity,
- R denote enforceable rights.

Dependency increases as access becomes conditional upon compliance and independent capacity declines:

$D \propto C / (I + R)$.

This expression is conceptual rather than econometric. It states that dependency becomes severe when survival requires compliance while independent production and enforceable rights approach zero.

Under ordinary wage labor, the worker may retain limited alternatives:

- changing employers,
- acquiring skills,
- starting an enterprise,
- saving capital,
- owning property,
- forming a cooperative,
- bargaining collectively.

These alternatives are often imperfect, but they provide countervailing power.

Under a fully automated system, human labor may lose market value altogether. The displaced person cannot threaten to withhold labor because the productive system no longer requires it. Bargaining power then approaches zero:

human necessity to production → 0
⇒ labor leverage → 0.

At that point, the recipient of universal provision is not necessarily an economically empowered citizen. The recipient may instead become an administratively maintained dependent.

The crucial distinction is:

a right is owed; an allowance is granted.

A right can be asserted against authority. An allowance can be modified, conditioned, suspended, or withdrawn by authority.

Proposition 1. Dependency proposition

Where productive ownership is concentrated and access to necessities is administratively distributed, increasing abundance may increase dependency rather than reduce it.

Proof sketch.

Greater automated abundance increases the productive capacity controlled by machine owners. If recipients possess no corresponding ownership, their independent productive position does not improve. If human labor simultaneously loses economic value, their alternative means of access decline. The owner's capacity rises while the recipient's bargaining power falls. Therefore the ratio of controlled provision to independent capacity increases. ■

4. Artificial Intelligence and the False Abundance of Intellect

Artificial intelligence can generate text, code, designs, images, predictions, hypotheses, and plans at extraordinary scale. It does not follow that society thereby acquires an equal abundance of wisdom.

The distinction is between output and judgment.

AI output ≠ human understanding.

A system may generate one million proposals while providing no internal guarantee that any proposal addresses the correct problem. The cost of producing candidate answers can decline while the cost of evaluating them increases.

Let:

- O be the volume of generated output,
- J be available human judgment,
- E be effective intellectual progress.

A simple limiting relation is:

$E \leq \min(O, J)$.

When O greatly exceeds J, additional output does not necessarily increase progress. It may increase noise, false confidence, duplication, and cognitive overload.

Thus:

O ↑ while J remains fixed
⇒ epistemic congestion ↑.

AI abundance may therefore produce a new scarcity: the scarcity of competent selection.

The most valuable human activity may no longer be generating an answer. It may be identifying which questions deserve answers, which assumptions are invalid, which outputs are misleading, and which objectives should never have been pursued.

Definition 3. Epistemic congestion

Epistemic congestion is a condition in which the production of claims, models, and recommendations exceeds the capacity of persons or institutions to evaluate their validity, relevance, provenance, and consequences.

Under epistemic congestion, apparent intelligence may increase while actual understanding declines.

The system knows more statements.
The civilization knows less about which statements matter.

Proposition 2. Judgment bottleneck

As machine-generated intellectual output approaches abundance, human judgment becomes a more—not less—important limiting resource.

The post-scarcity thesis mistakes the abundance of symbolic production for the abundance of responsible intelligence. Yet intelligence adequate to civilization requires more than formal competence. It requires memory, context, accountability, moral discrimination, anomaly recognition, and the ability to reject the governing frame.

A machine may optimize the answer while leaving the question unexamined.

5. Cognitive Dependence and the Atrophy of Human Competence

Tools can increase human capability. They can also displace the capacities required to supervise them.

The danger is recursive:

automation of judgment
→ reduced exercise of judgment

→ diminished human competence
→ increased reliance on automation.

Let H_t represent retained human competence at time t, U_t the degree of active human use, and δ the rate of skill loss. A minimal decay model is:

$H_{t+1} = H_t + \text{learning} - \delta (1 - U_t)$.

As active use approaches zero, competence decays unless deliberately preserved.

This has already occurred in limited domains. Navigation tools reduce practiced spatial memory. Automated calculation reduces mental arithmetic. Recommendation systems replace active search. Decision systems encourage operators to defer to scores they cannot independently reconstruct.

The danger becomes civilizational when the lost competence concerns:

- infrastructure,
- agriculture,
- medicine,
- manufacturing,
- energy,
- cybersecurity,
- scientific interpretation,
- institutional governance.

A society may retain the outputs of knowledge while losing the ability to regenerate the knowledge itself.

Definition 4. Epistemic externalization

Epistemic externalization is the transfer of a cognitive capacity from persons or communities into systems that the persons or communities cannot independently inspect, reproduce, or repair.

Externalization is not necessarily harmful. Written language externalizes memory. Mathematics externalizes reasoning. Instruments externalize perception. The danger appears when externalization becomes irreversible dependency.A book can be read by many minds.
A closed automated system may replace the minds capable of understanding it.

Theorem 1. Competence inversion

When the operation of an essential system becomes more complex than the retained understanding of its human supervisors, formal human authority over the system ceases to imply effective control.

Argument.

The supervisors may possess legal authority to issue commands, but they cannot reliably predict consequences, diagnose failures, or construct alternatives. Their authority becomes ceremonial. Effective control migrates toward the automated system, its designers, or the small technical class capable of interpreting it. ■

The result is a paradox:

greater machine intelligence → weaker human sovereignty.

6. Robotics and the Crisis of Social Legitimacy

The robotic economy is usually justified by efficiency. If machines can perform dangerous, repetitive, exhausting, or unpleasant work, then replacing human labor appears beneficial.

This argument treats work only as a production cost.

Human work also performs social and political functions. It provides income, identity, competence, status, routine, association, bargaining power, and evidence of participation in a common world. To remove work is therefore not merely to remove effort. It is to alter the social position of the worker.

A person who works can say:

I contribute; therefore I possess standing.

A person permanently excluded from production may instead be told:

The system does not need you, but it will maintain you.

The second condition may provide material comfort while denying reciprocal membership.

Definition 5. Productive standing

Productive standing is the recognized capacity of a person to contribute something that a society considers necessary, valuable, or irreplaceable.

Productive standing need not be limited to wage labor. It may arise from caregiving, craftsmanship, teaching, community participation, art, agriculture, religious service, or civic responsibility. The essential feature is not payment but recognized contribution.

Automation threatens productive standing when it defines value exclusively by machine efficiency.

Let:

- P denote productive standing,
- B denote bargaining power,
- N denote the productive system's need for human labor,
- S denote social stability.

A simplified relation is:

$B \propto N$.

As the system's need for human labor declines, the worker's capacity to bargain declines. If productive standing is still tied to economic necessity, then:

$N \downarrow \Rightarrow B \downarrow \Rightarrow P \downarrow$.

Social stability may consequently decline even while material production rises:

production ↑ while P ↓
$\Rightarrow$ S may ↓.

The standard automation narrative assumes that people will accept displacement in exchange for inexpensive goods. This is psychologically and politically doubtful. Human beings do not ordinarily seek consumption alone. They seek recognition as agents whose actions matter.

The conflict is therefore unlikely to be simply between humans and robots. Robots possess no independent political intention. The conflict will concern the institutions that own, deploy, and protect them.

The more accurate opposition is:

dispossessed persons versus automated ownership.

Resistance may take many forms:

- restrictions on labor-replacing machines,
- demands for human employment quotas,

- attacks on automated infrastructure,
- local-production movements,
- robot taxes,
- compulsory public ownership,
- cooperative automation,
- sabotage,
- political populism,
- rejection of machine-mediated services.

Such resistance need not be technologically rational in a narrow sense. It may be socially rational if the technology destroys the conditions of human independence.

Proposition 3. Legitimacy constraint

A technically efficient form of automation is politically unstable when it eliminates human bargaining power without establishing an equally strong form of ownership, participation, or enforceable right.

Argument.

Efficiency benefits the population only when the population possesses a secure claim upon the resulting output. Where that claim is absent, displaced persons experience automation not as liberation but as dispossession. Persistent dispossession undermines the legitimacy of the institutions protecting automated production. ■

Robotic efficiency is therefore bounded by political legitimacy:

sustainable automation ≤ socially legitimate automation.

A society cannot assume that every technically possible substitution will remain politically permissible.

7. Automated Reproduction and the Myth of the Self-Sustaining System

The strongest post-scarcity model imagines machines that produce other machines, maintain factories, extract resources, distribute goods, and repair their own infrastructure.

The envisioned sequence is:

robots → factories → more robots → more factories.

This resembles biological reproduction, but the analogy is incomplete. Biological organisms reproduce within ecosystems that continuously test, vary, and select them. Industrial systems reproduce within institutional, informational, and material environments constructed by human beings.

A machine may reproduce its design without understanding whether the design should continue to exist.

Definition 6. Operational reproduction

Operational reproduction is the capacity of a system to manufacture, assemble, or restore components of its existing productive architecture.

Definition 7. Ontological reproduction

Ontological reproduction is the capacity of a system to reconsider what kind of system it should be, revise its governing concepts, and create successor forms appropriate to conditions not anticipated by its original architecture.

Operational reproduction is plausible. Ontological reproduction is much more difficult.

A factory may replace a defective motor.
It may not recognize that its entire production objective has become obsolete.

A model may optimize a supply chain.
It may not recognize that the surrounding political order is collapsing.

A diagnostic system may classify known failures.
It may not recognize an anomaly that invalidates its classification scheme.

The distinction can be stated:

repair within a paradigm ≠ revision of the paradigm.

Human insight often appears at precisely this boundary. It identifies that the accepted categories are wrong, that a successful procedure has become dangerous, or that an apparently local defect is evidence of a deeper structural failure.

Let:

- A represent automation,
- M represent routine maintenance,
- X represent unforeseen conditions,

- R represent successful recovery.

Under familiar conditions:

A + M → stable operation.

Under radical novelty:

A + M + X ⇏ R.

Recovery may require a form of insight not contained in the maintenance cycle.

Definition 8. Insight reserve

An insight reserve is the retained human capacity to diagnose, reinterpret, reconstruct, or replace an essential system when its established procedures fail.

An automated civilization that permits its insight reserve to disappear becomes increasingly fragile. It may perform exceptionally well within its expected environment while losing the capacity to survive outside it.

This gives rise to a general tradeoff:

optimization for normality ↑
⇒ adaptability to abnormality may ↓.

The system becomes efficient because it removes redundancy, informal workarounds, local knowledge, and unused expertise. Those apparently wasteful elements may be exactly what recovery requires after an unprecedented failure.

Theorem 2. Automation fragility theorem

If an essential automated system eliminates the external human competence required to reconstruct it, then the system's apparent autonomy increases while its recoverability decreases.

Proof sketch.

Let H be the human competence required for independent reconstruction, and let D be dependence upon the automated system. As automation replaces human practice, H declines. As institutions reorganize around the automated system, D rises. A severe system failure requires recovery capacity proportional to retained H. Therefore, when H approaches zero while D remains high, failure becomes increasingly irreversible. ■

Formally:

H → 0 and D → 1
⇒ recoverability → 0.

The danger is not merely mechanical failure. It is epistemic closure.

Automated systems may train on outputs generated by other automated systems. Synthetic measurements may validate synthetic models. Machine-produced standards may be checked by machine-produced audits. Errors may become mutually confirming.

The cycle is:

generated output
→ automated evaluation
→ certified output
→ retraining data
→ amplified convention.

A closed validation loop can preserve consistency while drifting away from reality.

Definition 9. Epistemic recursion failure

Epistemic recursion failure occurs when automated systems increasingly evaluate, train, and correct one another without sufficient independent contact with the phenomena they purport to represent.

The resulting civilization may possess enormous internal coherence and diminishing external truth.

8. Supply, Demand, and the Possibility of Human Superfluity

The claim that automated supply will exceed human demand appears optimistic. Yet the proposition is morally ambiguous.

Demand is not identical to need.

In economics, effective demand ordinarily requires both desire and purchasing power. A person may urgently need food, housing, or medicine while exerting little market demand because that person lacks money.

Thus:

need without purchasing power ≠ effective demand.

A society may possess material surplus while denying access to those who need it. Warehouses can be full while people remain deprived. Production alone does not establish entitlement.

Definition 10. Distributive abundance

Distributive abundance is a condition in which goods are not merely plentiful but reliably accessible to all persons who need them.

This must be distinguished from productive abundance:

productive abundance = high output.

distributive abundance = secure access.

The two are not equivalent:

productive abundance ⇏ distributive abundance.

The deeper concern arises when automation reduces the economic need for human beings themselves.

Industrial societies have historically depended upon people in several roles:

- workers,
- consumers,
- taxpayers,
- soldiers,
- inventors,
- administrators,
- caregivers,
- citizens capable of maintaining institutions.

A sufficiently automated system might reduce its dependence upon many of these functions. The population could then appear, from the perspective of centralized management, less as a productive asset and more as a continuing obligation.

This transformation may be represented as:

human population as productive capacity
→ human population as distribution cost.

The transition is politically dangerous because economic systems tend to preserve what they require. A system that requires human skill has reason to educate people. A system that requires consumers has reason to maintain purchasing power. A system that requires citizens has reason to preserve civic legitimacy.

A system that requires only a small technical elite and an automated productive base may possess fewer internal incentives to preserve a large, independent population.

This does not imply a deliberate depopulation program. It identifies a structural risk.

Proposition 4. Superfluity risk

When the productive order no longer depends upon the labor, judgment, or consumption of most persons, the economic system ceases to contain a strong internal guarantee of their political importance.

Human value may continue to be affirmed morally, religiously, constitutionally, or culturally. It is no longer secured by economic necessity.

The distinction is decisive:

a person may possess intrinsic worth while lacking systemic usefulness.

A humane society can recognize this distinction and defend intrinsic worth. An instrumental society may not.

The rhetoric of “unlimited goods and services” therefore conceals a question more important than quantity:

For whom is production organized?

If production is organized for human flourishing, automation may serve life.

If human beings are reorganized for the convenience of automated production, life becomes subordinate to the system.

Definition 11. Systemic anthropocentrism

Systemic anthropocentrism is the principle that economic and technological systems exist for human beings, rather than human beings existing to stabilize, justify, or feed those systems.

The principle may be written:

technology → human flourishing.

Its inversion is:

humanity → system optimization.

The post-scarcity narrative often assumes the first while constructing conditions favorable to the second.

9. Universal Income and the Transformation of Citizenship

When automation removes employment, income must either be redistributed or large portions of the population must lose access to necessities.

Universal income is proposed as the bridge between automated production and universal consumption. Every person receives sufficient purchasing power regardless of employment.

The proposal appears emancipatory because it separates survival from work:

right to live ≠ obligation to sell labor.

Yet the political character of universal income depends upon its institutional form.

A payment may function as:

- an enforceable right,
- a revocable benefit,
- a programmable allowance,
- a behavioral incentive,
- an emergency ration,
- a substitute for property,
- compensation for political exclusion.

The amount alone does not determine freedom.

Definition 12. Independent income

Independent income is income controlled by the recipient through ownership, enforceable entitlement, or productive exchange that cannot be arbitrarily withdrawn by a discretionary authority.

Definition 13. Administrative income

Administrative income is income issued by an institution under rules that the recipient does not meaningfully control and that may be modified, conditioned, delayed, or revoked.

Universal income can take either form.

Suppose each citizen receives $5,000 per month, but all productive assets remain concentrated in a small ownership class. The numerical generosity of the payment does not answer the political questions:

Who determines whether the $5,000 continues?
Who defines eligibility?
Can the payment be reduced?
Can purchases be restricted?
Can accounts be frozen?
Can the currency expire?
Can participation be conditioned upon conduct?

A high allowance may coexist with low sovereignty.

Let:

- Y denote distributed income,
- O denote ownership,
- K denote conditionality,
- F denote economic freedom.

A conceptual relation is:

$F \propto (Y + O) / (1 + K)$.

Increasing Y may increase material comfort. Increasing O increases structural independence. Increasing K reduces freedom by making access dependent upon compliance.

If O approaches zero and K becomes large, even a generous Y may fail to produce genuine autonomy.

Proposition 5. Allowance paradox

The more completely a person depends upon an administratively issued income, the less effectively that person can oppose the institution issuing it.

This creates a circular structure:

dependency on payment
→ reduced capacity for opposition
→ stronger issuing authority
→ greater dependency on payment.

The traditional worker may be exploited, yet the worker retains a form of leverage because production requires labor. The universal-income recipient in a fully automated economy may possess no equivalent leverage.

The worker can strike.
The dependent can only petition.

Classical communism proposed collective ownership of productive capital, however imperfectly or coercively realized in historical practice. A privately owned automated economy with universal allowances proposes something structurally different:

**private ownership of production

- public dependence on distribution.**

This arrangement may combine the concentrated productive power of monopoly capitalism with the administrative reach of centralized planning.

It is therefore not adequately described as either capitalism or communism.

Definition 14. Automated neo-feudalism

Automated neo-feudalism is an economic order in which a narrow ownership class controls machine production while the majority receives conditional access to necessities without possessing significant productive assets or bargaining power.

Its characteristic relations are:

owner : machine capital

administrator : allocation system

dependent : permitted consumption

The dependent may enjoy a high material standard of living. Feudalism is not defined here by poverty, castles, or agricultural labor. It is defined by asymmetric dependence.

A comfortable dependent remains dependent.

The governing distinction is:

provision is not possession.

A house provided by a system is not equivalent to a house securely owned.
Transportation access is not equivalent to freedom of movement.
A recurring allowance is not equivalent to productive independence.
Permission to use is not equivalent to the right to control.

Universal income can protect liberty only when embedded within stronger institutions of ownership, constitutional protection, non-programmable rights, and decentralized productive capacity.

Otherwise, it risks becoming the monetary expression of permanent subordination.

10. From Post-Scarcity to Total Administration

The optimistic post-scarcity model assumes that declining prices reduce the importance of political control. Yet the opposite may occur. When access to nearly all necessities passes through a unified automated infrastructure, the authority governing that infrastructure gains unprecedented leverage.

The relevant transformation is:

market dependence → platform dependence → infrastructural dependence.

A person may currently obtain food, housing, transportation, communication, and employment through partially separate institutions. These institutions can still coordinate, monopolize, or discriminate, but their plurality provides some possibility of exit.

A fully integrated automated economy may combine:

- digital identity,
- banking,
- communication,
- transportation,
- housing access,
- medical care,
- education,

- energy,
- food distribution,
- public benefits,
- legal status.

Integration reduces friction. It also reduces refuge.

Definition 15. Infrastructural sovereignty

Infrastructural sovereignty is the capacity to determine whether another person may participate in the systems required for ordinary social and material life.

Where infrastructural sovereignty is widely distributed, exclusion from one institution need not imply exclusion from society. Where it is concentrated, a single adverse decision can become civil death.

Let:

- I denote infrastructural integration,
- E denote the number of independent exit paths,
- C denote centralized control,
- V denote individual vulnerability.

A conceptual relation is:

$$V \propto I\,C / (1 + E).$$

As systems become more integrated and centralized while exit paths decline, vulnerability increases.

Automation intensifies this condition because administrative decisions can be executed immediately and at scale. A traditional bureaucracy may be slow, inconsistent, and locally negotiable. An automated bureaucracy can apply a rule universally, continuously, and without human hesitation.

This gives rise to a new distinction:

arbitrary rule by persons

versus

impersonal rule by systems designed by persons.

The second may appear more objective. It may also be more difficult to resist.

A human official can reconsider.
A machine can enforce the rule perfectly.
An institution can then claim that no person made the decision.

Definition 16. Delegated coercion

Delegated coercion is the exercise of institutional power through automated systems in a manner that obscures, diffuses, or denies human responsibility.

The governing sequence is:

human policy → machine execution → institutional denial of agency.

No individual appears responsible because each participant points elsewhere:

- the administrator points to the policy,
- the policymaker points to the model,
- the engineer points to the specification,
- the model points nowhere.

Responsibility evaporates while control remains.

Proposition 6. Administrative amplification

Automation does not remove political coercion. It can amplify coercion by making rules faster, cheaper, more comprehensive, and less contestable.

The danger is especially acute when money becomes programmable.

Traditional money ordinarily allows the holder to decide among lawful purchases.
Programmable money can potentially determine:

- where it may be spent,
- when it expires,
- which goods are permitted,
- which regions are accessible,
- whether it may be saved,
- whether it may be transferred,

- whether access depends upon behavioral compliance.

The transformation is:

money as generalized purchasing power

becomes

money as conditional behavioral permission.

Such a currency would not merely allocate scarcity. It would encode governance into every transaction.

Definition 17. Programmable dependency

Programmable dependency is a condition in which a person's material access is continuously mediated by computational rules that the person cannot independently alter, escape, or contest.

Under programmable dependency, money does not disappear. It becomes more intimate.

It no longer merely records what a person can afford.
It determines what the person is allowed to do.

The post-scarcity promise may therefore culminate not in the abolition of money, but in its perfection as an instrument of control.

11. The Political Economy of Human Redundancy

A political order is shaped not only by what rulers believe but by whom the system materially requires.

Agrarian elites required peasants.
Industrial capital required workers.
Mass production required consumers.
Nation-states required soldiers and taxpayers.

These dependencies did not guarantee humane treatment. They nevertheless gave ordinary people forms of structural importance.

Automation may weaken those forms simultaneously.

Let:

- L denote dependence on human labor,

- C denote dependence on human consumption,
- K denote dependence on human knowledge,
- P denote the political importance of the general population.

A minimal structural relation is:

$P \propto L + C + K$.

If machine production reduces L, automated planning reduces K, and institutional provision replaces market consumption, then C may also decline.

Thus:

$L \downarrow, C \downarrow, K \downarrow$
$\Rightarrow$ P may $\downarrow$.

This does not mean that human worth objectively declines. It means that the productive system may cease to require recognition of that worth.

Definition 18. Structural necessity

Structural necessity is the degree to which an institution must preserve the capacities, cooperation, or consent of a population in order to continue functioning.

Structural necessity differs from moral worth.

A person may possess absolute moral worth while possessing little structural necessity to a machine economy. The political danger begins when institutions honor only what they require.

The automated order may then divide the population into four classes:

1. machine owners,
2. technical custodians,
3. administrative managers,
4. supported dependents.

The first class controls productive capital.
The second preserves the machinery.
The third governs distribution.
The fourth receives what the first three permit.

Class mobility may decrease because entry into the productive order requires access to systems already controlled by the upper classes. The dependent population cannot accumulate

meaningful capital if its income is calibrated merely to consumption. It cannot bargain through labor if machines have replaced labor. It cannot exit the system if independent production has disappeared.

The resulting structure is self-reinforcing:

ownership → control of automation
→ control of output
→ control of distribution
→ preservation of ownership.

Theorem 3. Closed ownership theorem

If automated capital produces nearly all economically necessary output, and ownership of that capital remains concentrated, then ordinary income redistribution does not by itself dissolve class domination.

Proof sketch.

Redistribution transfers a portion of output while leaving control of productive assets unchanged. The owning class retains authority over investment, system design, maintenance, production priorities, and the terms of future distribution. Recipients remain dependent upon recurring transfers. Therefore consumption may be equalized while control remains unequal. ■

This distinction separates welfare from sovereignty.

Welfare concerns what a person receives.

Sovereignty concerns what a person can control.

A highly provisioned population may possess substantial welfare and almost no sovereignty.

The political question is therefore not:

How much will everyone receive?

It is:

What can no institution take away?

A free society requires domains of action that do not depend upon continuous approval.

These may include:

- secure personal property,
- local productive capacity,

- independent communication,
- non-programmable money,
- due process before exclusion,
- the right to repair,
- access to source knowledge,
- freedom to form alternative institutions,
- meaningful control over automated capital.

Without such domains, abundance becomes custodial.

The population is fed, housed, transported, entertained, and monitored as a managed resource.

Definition 19. Custodial civilization

A custodial civilization is a social order that provides extensive material care while treating adults primarily as subjects to be maintained, guided, and regulated rather than as independent agents.

Custodial civilization may be benevolent in intention. Its danger lies in permanent asymmetry.

The custodian decides.
The dependent receives.

12. Conditions for Liberating Automation

The critique of automated abundance does not require rejection of artificial intelligence or robotics. It requires rejection of the inference that technological abundance automatically produces political freedom.

Automation can be liberating only when accompanied by institutions that preserve human agency.

The necessary transformation is not merely:

more production.

It is:

more production + distributed control + protected independence.

Several principles follow.

Principle 1. Ownership must accompany automation

Persons displaced by machine capital require more than compensation. They require an ownership claim in the systems replacing them.

Possible forms include:

- individual shares,
- worker ownership,
- municipal ownership,
- public trusts,
- citizen dividends,
- cooperatives,
- distributed machine ownership,
- legally protected common infrastructure.

The governing principle is:

automation dividend should follow from ownership, not administrative grace.

A citizen who receives a dividend from jointly owned productive capital stands differently from a recipient of a discretionary allowance.

The first possesses a claim.
The second depends upon a grant.

Principle 2. Human competence must be preserved deliberately

Essential systems should retain human-readable documentation, independent verification, manual fallback procedures, and living communities capable of reconstruction.

The principle is:

no essential automation without an external path of understanding.

A civilization should preserve not only operational personnel but also first-principles competence.

This includes the ability to answer:

- Why does the system work?

- What assumptions does it make?
- What evidence could falsify it?
- How can it be rebuilt?
- What happens when its categories fail?
- Who can override it?
- Who is accountable for the override?

Principle 3. Exit must remain possible

Freedom requires alternatives.

A person should be able to:

- hold resources outside a single platform,
- transact without comprehensive behavioral scoring,
- repair owned machinery,
- communicate through independent channels,
- participate in local production,
- refuse nonessential automation,
- challenge automated decisions,
- migrate between institutional systems.

The formal condition is:

freedom requires E > 0,

where E denotes meaningful exit.

A theoretical alternative that is economically impossible is not a genuine exit.

Principle 4. Distribution must be a right, not a favor

Where automation generates social abundance, access to basic goods should be constitutionally or legally secured rather than left to periodic administrative discretion.

The distinction is:

entitlement under law ≠ permission under management.

Rights require:

- clear eligibility,
- due process,
- transparency,
- appeal,
- non-retaliation,
- stable funding,
- limits on behavioral conditions.

Principle 5. Money must not become universal surveillance

Digital payment systems should not automatically become total records of identity, movement, association, and political conduct.

Economic participation should retain zones of privacy.

A free monetary system must preserve some separation between:

payment information

and

personal obedience.

Principle 6. Human contribution must not be reduced to market necessity

When machines perform more commercial labor, societies must recognize forms of contribution that markets undervalue:

- caregiving,
- mentoring,
- scholarship,
- art,
- local stewardship,
- religious life,
- civic participation,
- preservation of memory,

- voluntary service,
- exploration.

Human dignity cannot depend upon outperforming a machine.

The relevant proposition is:

human worth > economic utility.

But the proposition must be institutionalized. A moral declaration without corresponding authority, ownership, and civic participation is insufficient.

Principle 7. Scale must remain politically bounded

Some automated systems may be too important to be governed as ordinary private property. Others may be too dangerous to centralize under the state.

The appropriate response may be institutional plurality:

public + private + cooperative + local + personal.

No single ownership form is universally adequate. Diversity prevents any one failure from becoming total.

Proposition 7. Plurality principle

A technologically advanced society is more resilient when essential productive and informational systems are distributed across multiple independently governed forms.

Plurality introduces inefficiency. That inefficiency may be the cost of freedom.

A perfectly optimized system is often one in which every alternative has been eliminated.

13. The Agency Criterion

The central dispute over post-scarcity economics can be reduced to two competing measures of progress.

The first measures output:

progress = more goods and services at lower cost.

The second measures agency:

progress = greater human capacity to act, refuse, create, own, understand, and participate.

The two measures may coincide. They may also diverge.

A system may produce more while allowing persons to control less.

Let:

- Q denote material quantity,
- A denote human agency,
- G denote genuine social progress.

Then:

G ≠ Q alone.

A stronger relation is:

G = f (Q, A),

with the constraint:

A must not approach 0.

If material output tends toward infinity while human agency tends toward zero, the resulting order should not be called liberation.

Formally:

Q → ∞ and A → 0
⇏ G → ∞.

Indeed, under an agency-centered evaluation:

Q → ∞ and A → 0
⇒ domination under abundance.

Definition 20. Agency criterion

The agency criterion states that a technological or economic system is liberating only insofar as it increases the durable capacity of persons to understand, choose, refuse, own, create, and participate in the institutions governing their lives.

The agency criterion rejects several substitutions:

comfort is not agency.

access is not ownership.

provision is not freedom.

output is not wisdom.

maintenance is not participation.

permission is not sovereignty.

The criterion does not romanticize scarcity. Poverty, drudgery, and preventable suffering are not sources of freedom. It instead denies that their technical elimination settles the political question.

The final question is always:

Who controls the abundance?

If control is distributed, automation may enlarge human freedom.

If control is concentrated, automation may eliminate the remaining foundations of resistance.

14. Conclusion

The post-scarcity argument presents a linear progression:

artificial intelligence
→ robotic labor
→ automated reproduction
→ unlimited production
→ universal income
→ disappearance of money.

Each step contains an unstated political assumption.

Artificial intelligence may multiply output without multiplying judgment. Robotics may eliminate labor while destroying bargaining power. Automated reproduction may sustain routine operations while eroding the human insight required for renewal. High supply may coexist with restricted access. Universal income may replace wages while establishing permanent administrative dependence. Money may cease to function as earned purchasing power only to reappear as programmable permission.

The counter-sequence is therefore:

automation
→ concentrated ownership

→ human economic redundancy
→ administrative distribution
→ weakened exit
→ programmable dependency
→ totalized control.

This outcome is not technologically necessary. It becomes likely when abundance is separated from ownership and provision is separated from agency.

The central proposition of this paper is:

abundance without ownership = dependency.

A second proposition follows:

dependency administered by machines is not abolished dependency.

The deepest mistake in the post-scarcity narrative is to assume that material abundance neutralizes power. Power does not disappear when goods become plentiful. It migrates toward control of infrastructure, identity, access, knowledge, and permission.

The decisive opposition is therefore not:

scarcity versus abundance.

It is:

agency versus dependency.

A humane technological order must preserve persons not merely as consumers of machine output but as owners, judges, creators, participants, and sources of legitimate authority.

The goal should not be a civilization in which machines provide everything to people.

It should be a civilization in which people remain capable of governing the machines, understanding the systems, refusing the administrators, and determining together what abundance is for.

The final principle is:

automation is liberating only when it expands human agency faster than it expands institutional control.

15. References

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